

XXXII.—*On Tongue-marks in Young Birds.*

By COLLINGWOOD INGRAM, M.B.O.U.

DURING several years of field-work in Europe and Japan I have paid particular attention to the nestlings of birds, noting, to the best of my ability, their peculiarities and family characteristics. It has always appeared to me that this branch of ornithology has been somewhat neglected by naturalists, although from time to time Mr. Pycraft has made some extremely interesting references to the subject.

My study of the immature bird has shown me that the young of many Passerine species are temporarily endowed with very remarkable black marks or spots on the upper surface of their tongues.

In 1898, when describing the peculiar bead-like ornamentations at the angle of the bill of the young Gouldian Finch (*Poephila mirabilis*), Dr. Butler (*Avicult. Mag.* vol. v. p. 27) remarked that the palate of this species is "conspicuously marked (like a domino) with five more or less round black spots in pentagonal form," and that "the tongue is crossed just in front of its centre by a broad belt or by two large pear-shaped black spots." This paper was subsequently referred to by both Dr. Sharpe and Mr. Pycraft.

When these spots occur among Palæartic birds they are usually only two in number, situated posteriorly one on each side of the tongue and close to its edge. These marks are of varying proportions, while the most usual patterns are, roughly speaking, lanceolate in shape, the two points being directed forward. Should a third be present it is to be found almost invariably on the tip of the tongue. Very rarely the inner extremities of both mandibles are ornamented in a similar way. Mr. Pycraft informs me that in *Panurus biarmicus* the markings are differently arranged and are *white* instead of black, an interesting discovery for which we are indebted in the first place to Miss E. L. Turner.

The use of these spots is not very evident, and, pending

Text-fig. 33.



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15a



15b



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further knowledge, I will refrain from hazarding any opinion on the subject. The characters, however, appear to be pretty constant in members of the same genus, and it is not unreasonable to assume that they may ultimately prove of some small taxonomic value. With regard to the last-mentioned case, Mr. Pycraft is of the opinion that their object is to guide the parents when feeding their young in the partial obscurity of the nest. However true this may be of the *white* marks, it cannot, I think, explain the presence of the black spots in other species; moreover, those possessing the latter usually breed in open and fairly light situations. I have found that when diurnal birds nest in holes or dark places their young are almost always endowed with exceptionally big, wax-like enlargements at the gape of the mouth. These are doubtless there to guide the feeding parent, and other markings would therefore be unnecessary. Good examples of this may be seen in *Cinclus*, *Parus*, and *Troglodytes*.

Of course, in the adult bird the tongue is modified in accordance with the kind of food taken and the methods used in procuring it; consequently it may vary not a little in the different members of the same family—but usually only in minor details. This fact—coupled with the similarity that is often noticed in the tongues of birds widely separated but of similar habits—has led Mr. F. A. Lucas ('Auk,' 1896, pp. 109–115) to discredit the importance of this organ in classification. But the black tongue-marks are often so very characteristic and boldly defined that their presence and form may sometimes point to affinities where relationship has hitherto been obscure. Among European birds, so far as my observations go, this peculiarity is only observable in the young of some of the species possessing a thin and somewhat horny tongue, like the Reed-Warblers, and is seldom found in conirostral birds with fleshy tongues. It occurs in the genera *Hypolais*, *Acrocephalus*, *Locustella*, *Cisticola*, *Accentor*, *Panurus*, and *Alauda*, while it is found in various degrees of intensity in *Sylvia*. In *Motacilla* it is sometimes only faintly indicated and almost obsolete; but I suspect that it is also

found in the young of *Luscinola*. Besides those above-mentioned, however, I do not think it probable that it occurs in any other family inhabiting the Palearctic Region, for during my research I have been able to amass much evidence of a negative kind, all of which points to this conclusion.

Although the colour of the tongue and the inside of the mouth ranges from purplish red in some of the Finches to bright yellow in the Willow-Warblers, I attach very little importance to this, as it is well-known that the colours of all the soft parts in birds are subject to many changes and variations.

In shape the tongue is very intimately related to the bill, hence it is small and broad in the newly-hatched bird, only getting its narrow form with the growth of the bill. A similar change takes place in the tongue-marks: these are at first short and thick, but they develop simultaneously with the tongue, and by the eighth or tenth day attain their characteristic shape. This is illustrated in text-fig. 33, fig. 15 *a*, which shews the tongue of a Hedge-Sparrow (*Accentor modularis*) about eleven days old, while fig. 15 *b* was taken from a bird of the same species not more than six days old. It is also shown in figs. 1, 2, and 4; for these represent tongues of closely-related *Acrocephali* taken at different ages. In these (as the genus *Hypolais*, fig. 3) the tongue-marks are what I may term of the simple type, being a pair of spots situated on the basal half of the tongue. In *Cisticola* (fig. 5) the black marks are greatly exaggerated, and *Locustella* (fig. 6) has a third on the end of the tongue. *Alauda* likewise has three marks; but in this case the bill is also ornamented, there being a spot on the inner side of the tips of both mandibles. With the true Warblers the marks are not always reliable, being often clouded and indistinct, varying considerably in different individuals. In figs. 7-11 (*S. cinerea*, *S. atricapilla*, *S. hortensis*, and *S. melanocephala*) I have given well-marked examples; in some individuals the dark marks may be scarcely perceptible. These remarks apply equally to *Motacilla raii* and *M. lugubris*

(figs. 14 & 16). In all the others figured the tongue-spots are quite constant both in shape and distribution, being clearly defined and of a deep black colour.

EXPLANATION OF TEXT-FIGURE 33, p. 575.

- Fig. 1. Tongue of *Acrocephalus phragmitis*: age about 8 days.  
 2.        "        *A. streperus*: age about 1 or 2 days.  
 3.        "        *Hypolais polyglotta*: age about 2 days.  
 4.        "        *Acrocephalus palustris*: age 5 or 6 days.  
 5.        "        *Cisticola cursitans*: age about 12 days.  
 6.        "        *Locustella naevia*: age about 11 days.  
 7.        "        *Sylvia cinerea*: age 5 days.  
 8.        "        *S. atricapilla*: age about 6 days.  
 9.        "        *S. hortensis*: age about 13 or 14 days.  
 10.       "        *S. orphea*: age about 6 days.  
 11.       "        *S. melanocephala*: age about 7 days.  
 12.       "        *Alauda arborea*: age about 2 days.  
 13.       "        *A. arvensis*: age about 6 days.  
 14.       "        *Motacilla raii*: age about 12 days.  
 15 a.     "        *Accentor modularis*: age about 11 days.  
 15 b.     "        *A. modularis*: age about 6 days.  
 16.       "        *Motacilla lugubris*: age about 11 days.

N.B.—The figures have been enlarged in order to shew the markings more clearly.

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XXXIII.—*On the Birds procured by Mr. W. N. McMillan's Expedition to the Sobat and Baro Rivers.*  
 By W. R. OGILVIE-GRANT.

THIS report is based on a large collection of birds made for Mr. W. N. McMillan during his expedition to the Sobat and Baro Rivers in the Anglo-Egyptian Sudan. A selection of these birds, which were collected by Mr. P. Zaphiro, was presented by Mr. McMillan to the British Museum. Though the collection contains examples of a large number of species, few of them are of any special interest, but nevertheless they are worthy of record, chiefly on account of the locality, whence but few specimens have been procured.

One small Waxbill (*Estrilda macmillani*) has been described as new from this collection.